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THE HEALTHFULNESS OF THE SEA-SHORE RESORTS.

SOME PERTINENT FACTS ABOUT MALARIA.

BY BOARDMAN REED, M. D., of Atlantic City, N. J.

President of the Atlantic County Medical Society, and of the Atlantic City Board of Health.

Is there malaria at any of the resorts along the New Jersey coast? Prof. Alfred L. Loomis, of New York, says: "Salt-water marshes are, as a rule, especially free from malaria; but mix salt and fresh waters, as in some of the New Jersey marshes, and you have the conditions for generating the poison. Marshes that rest on a substratum of sand are not so malarial as those that rest on limestone, clay, or mud."

This may be accepted as authoritative. Physicians in sending away patients will do well to bear it in mind. Wherever rivers empty into the ea, there such a mixture occurs. Another fact which should also be remembered is that, cateris paribus, the more rank the growth of vegetation in any place, whether at the shore or in the country, the greater the likelihood of miasmatic fevers arising toward the end of summer. Decaying vegetable matter, in the presence of heat and moisture, probably always engenders a certain amount of malaria, though when the material thus decaying is small, the poison produced may be only infinitesimal.

Owing to the luxuriance of their crops of vegetation, the newer settlements on the Western prairies have always been cursed with malarial fevers; but just in proportion as the soil is cultivated and wild nature is brought into subjection, such diseases disappear, except where perpetuated by sluggish streams.

Our New Jersey beaches, except those near the mouths of fresh-water streams, enjoy, as a rule, almost entire immunity from the paludal poison, since the dry sand, which constitutes their soil,

chlorine, iodine, etc., borne over them from the ocean, and across the salt-water bays and marshes at the rear, are decidedly anti-septic and anti-malarial. The older and more highly-improved places, where all rank vegetation is kept down, should be especially exempt, as experience proves them to be.

The numerous virgin beaches which have recently been made the sites of imposing paper cities, may have attractions for robust tourists and for some quasi-invalids, who enjoy hunting and fishing, and prefer being away from the fashlonable crowd; but a more certain exemption from malaria is not by any means to be included among their advantages, notwithstanding the oft-reiterated assertions of the land agents, and of other gentlemen who are the hopeful possessors of corner lots at such places. The projectors of these embryonic sanitaria are always firmly convinced that it is very unhealthy at Atlantic City, Cape May, Long Branch, and the other older resorts.

Since many persons, including physicians, confide in such interested statements without requiring proofs or making any discrimination between the places attacked, a few plain facts bearing upon the healthfulness of some of these resorts may be of interest. At Cape May an epidemic of fever is said to have broken out in one of the large hotels last summer, and was attributed to an attempt to sewer into a sluggish creek in the vicinity. Whatever the cause, it will no doubt be remedied before another season opens. This experience seems to confirm the opinition of many seed and tarians, that the system of storage in property

intervals, may be safer for the level seaside beaches than any system of sewerage which does not include duch tanks, forcing pumps, or other expensive apparates, and an outlet far away from the town, which is sometimes impracticable. Though there has never been such an epidemic in any Atlantic City hotel, the newspapers in commenting upon this occurrence assumed in some instances that both places were equally involved. The following facts are a sufficient answer to all such insinuations.

Atlantic City, as is well known, is wholly surrounded by unmixed salt water, besides having six miles of salt meadows behind it, and rests upon a bed of dry sand—therein fulfilling the two conditions laid down by Prof. Loomis as essential to immunity from malaria. No considerable fresh water stream empties within many miles of it. My personal experience of the place, dating back thirteen years, during five years of which I have been residing in it all the year round, affords strong evidence against the probability of malaria originating here. Myself and family have always enjoyed exceptionally good health here, and in particular have never suffered from fevers, nor from malaria in any form.

In my practice among invalid visitors, I see a great deal of malaria. It is one of the diseases for which visitors come here, particularly in winter; and when they remain long enough, they do not often come in vain.

Those coming from more decidedly malarious localities, such as Washington, D. C., some portions of New York city, and from most places along the New Jersey shore of the Delaware river, are liable to have some manifestation of malarial character developed shortly after their arrival, especially if they should be suddenly chilled, or suffer from hepatic disturbance, as often happens in consequence of over-indulgence of the enormous appetite usually provoked by the sea air. The phenomenon is well understood by those accustomed to treat patients from miasmatic regions, and is particularly referred to by Prof. Bartholow. It is an occasional though transient result of the first contact with sea-air anywhere, and I have seen the same thing at the mountain resorts, as a result of the abrupt change, in persons whose systems were saturated with malaria in a dormant form.

Visitors from non-malarious places are never affected in such a way; and the permanent residents of Atlantic City are practically exempt from malarial diseases. The exceptions in my experience have been so exceedingly few as to prove the

rule. For instance, I have never seen a single undoubted case of intermittent fever in one of this class, except in persons who had lately returned from visits to notoriously malarial localities; though in a fatal case of diabetes mellitus attended by me, there was at last some fever of an obscurely intermittent type.

Following is one of several striking cases I might report of persons who, after long residing in Atlantic City without having any malarial symptoms whatever, visited miasmatic regions and suffered from severe attacks of intermittent on their return:

A young lady who, with her family, had been under my professional care since the first year of my residence here, and always enjoyed a perfect immunity from malarial affections, spent a few weeks with friends at St. Catherine's, Canada, during the month of September. Her friends warned her not to go out of doors after nightfall for fear of malaria, but the advice was not strictly followed. After returning home-within one or two weeks-she had a severe attack of genuine ague. This was in 1881, and though her system seemed to be thoroughly charged with the poison in an unusually active form, it yielded in due time to treatment, and it was so completely eliminated that last fall she, though remaining here till the end of September, had no return of the disease whatever, and has remained free from it up to this time-February, 1883.

As for remittent fever, I have never seen a case of it among the residents, and but a single one among visitors. This one case was in the person of a young lady from New York city, some of whose family had suffered with the same form of fever at home shortly before. She recovered entirely before leaving here.

It may be asked, are there never fevers of any kind at Atlantic City? Not in winter or spring, if we except the exanthemata; but it would be singular indeed if none of the two or three hundred thousand people who visit the place every summer were ever imprudent enough in their eating, drinking, and bathing, to develop febrile Sporadic cases of a mild continued affections. fever, with sometimes enteric complications, are seen occasionally during the latter part of the season. These are usually among a class of persons not at all attentive to the rules of hygiene, who bathe in the surf from one to two hours daily (not always excepting the catamenial period in the case of ladies), and then immediately afterward gorge themselves at dinner, following this within a few hours with a supper, frequently of raw

oysters even in midsummer, when the bivalves are "in the milk," and very putrescible. After such a day, half the night is often spent in revels of one sort or another, with or without a plentiful accompaniment of stimulants. There are not merely hundreds, but thousands, who go through with such a programme almost daily in the summer for several weeks, or until cholera morbus, fever, or some other acute disease, results as a natural consequence. Those who are a little less reckless may have the inevitable penalty deferred till they reach home; and then, as they usually forget to tell the doctor the whole story, both he and the friends are likely to lay the blame upon the air at the seashore. The bad water furnished at some of the inferior houses is no doubt sometimes a factor in the causation of fevers and diarrheas, and one for which there is now not the slightest excuse in Atlanic City, since an abundance of the purest water is to be had. But of this, more further on.

The only wonder is that any of the thousands who thus disregard all hygienic considerations, in the matter of bathing especially, should ever escape serious illness. Yet last summer I saw but two visitors with any form of protracted fever. One was a youth recently from a college in an inland town, where his friends believed that he imbibed the germs of the disease. But he had been spending an hour and a half every day in the surf for two or three weeks, and this alone would have ensured the development of any tendency to fever by the long-continued and repeated congestions of all the internal organs thus produced. It was a very light attack of continued fever, with a slight diarrhoea at one stage, but no rose-colored spots nor tympanites, and he was well again in three weeks. The other patient, a married lady. had been ailing ever since a recent visit to Florida, where she had relatives, and she had been excessively addicted to surf bathing. She had enteric fever, and recovered in four weeks. Both these patients stopped at boarding-houses of the less pretentious class, at one of which the drinking water was of more than doubtful quality; yet there was but the one case of fever in either house, though both houses were full of people all summer. This fact renders it highly probable that the germs or tendencies which were the predisposing causes of these two cases were brought by the patients with them when they came here, and that they were developed by the exciting causes already alluded to.

At the numerous large and carefully conducted hotels where I regularly attended, there were no

cases of fever of any kind at any time during the season, nor have there been any since. The same may be said of these hotels during the previous year. In the summer of 1881 I saw the following two cases only:

A young lady of by no means robust constitution was sojourning at a small boarding-house on the avenue farthest back from the ocean. She bathed every day from an hour to an hour and a half. After being here a few weeks, she developed a mild continued fever, with some diarrhoa for a few days, but with no other enteric symptoms. The temperature fell to the normal in two weeks, but there was a slight return of fever subsequently, which protracted the convalescence one or two weeks longer. There were no other cases in the house, though, considering its cheap character, there might well have been without any fault thereby attaching to the hundreds of well-kept houses in more desirable parts of the town.

The other case was that of a gentleman, who with his wife and large family of children occupied a cottage on a prominent avenue. He went back and forwards to the city every week-day, so that only his nights and Sundays were spent in Atlantic City. He had a moderately severe attack of typho-malarial fever, and recovered in about four weeks, while his family, who were here day and night all summer, were none of them attacked: the inference is plaln.

But as already intimated, considering the reckless habits of many visitors, and the large proportion of them who, coming directly from great cities where they breathed continually an atmosphere polluted by sewer gas and foul-smelling gutters, might be presumed to bear with them the germs of typhoid fever and other zymotic diseases, the only wonder should be that so exceedingly few develop any serious illness. It must be taken as a confirmation of the opinion that the typhoid poison, at least, if not the germs of the miasmatic fevers as well, more often gains access to the economy through the stomach than the lungs.

There is much talk now-a-days about malariu—bad air—but more cases of disease, whether in city, country, or at the shore, probably arise from bad water.

The water supply of Atlantic City was, until recently, either from wells or cisterns. The former, used for drinking by the poorer classes of the residents only, furnish surface water of varying degrees of badness, yet many seem to drink it with impunity. The cisterns are generally



